**Society of Behavioral Medicine Annual Meeting**

**Title**:

Optimizing Facebook Ads to Reach and Recruit of Military Veterans: A Factorial Design

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**Primary topic area**: Health Communication

**Secondary topic area**: Military and Veterans’ Health

**Abstract**

Background

Although prior research has demonstrated the feasibility of recruiting research subjects through Facebook advertising, less is known about the effectiveness of varying? ad content and strategies to recruit military veterans.

Methods

Facebook advertisements tailored to military veterans with links to a brief online survey were posted for six weeks, beginning in January 2017. Using a full factorial design, we varied advertisements with three images (person taking a survey; veteran with his family; soldiers marching) and five headlines informed by behavioral economics principles (social norms; altruism; empowerment; incentive; and sharing), resulting in a total of 15 variations. Outcomes included degree of ad engagement, ranging from low (impressions) to medium (link clicks) to high (survey participation), and cost effectiveness. Negative binomial models incorporating the full factorial design were used to compare image and headline main effects and interactions on each outcome.

Results

Overall, advertisements resulted in 827,918 impressions delivered to 406,730 people, and produced 9,527 clicks (1.20% click-through rate), 710 eligible participants, and 587 enrolled survey participants (83% response rate). One hundred fifty-five participants (26%) had never been enrolled in the VA, and 322 (55%) had not used VA health care services in the prior year. Total advertisements cost $11,427, for an average cost per participant of $19.47.

For both number of impressions and clicks, soldiers marching outperformed other images (p < 0.001 for all comparisons). There was no significant effect of image on survey participation. “Sharing” and “incentive” headlines performed significantly better than social norms (p < 0.001 and p = 0.008, respectively). Half of survey participants (n=285) were recruited by just two of the 15 ads: soldiers marching with an “incentive” headline and “sharing” headline. These two ads were also the most cost effective, at $4.88 and $5.90 per participant, respectively.

Conclusions

Facebook advertisements are effective in rapidly and inexpensively reaching and engaging military veterans, including those not receiving VA healthcare. Ad features such as images of soldiers, and headlines mentioning incentives or a request to share the ad with others may help optimize effectiveness of ads to reach and recruit veterans.

Impact

Facebook advertisements can be a powerful tool to enable researchers to efficiently reach and recruit veterans not currently engaged in the VA.